

## **SYSTEM AND METHOD FOR DYNAMICALLY MANAGING A FINANCIAL ACCOUNT**

### **CROSS REFERENCE TO RELATED APPLICATIONS**

This application is related to, and incorporates by reference, United States Patent Application having Serial Number \_\_/ \_\_, \_\_ and entitled "SYSTEM FOR PROVIDING A CHECKLESS CHECKING ACCOUNT" which is filed concurrently herewith and is assigned  
5 to the same assignee.

This application claims priority to U.S. Provisional Application for Patent having Serial Number 60/466,494 filed on April 29, 2003.

### **TECHNICAL FIELD**

The present invention relates to banking industries and, more particularly, to a system  
10 and method for dynamically managing a financial account by observing transaction for a plurality of financial accounts, aggregating the information regarding the transactions and modifying the services provided to the financial account based on the aggregated information.

### **BACKGROUND OF THE INVENTION**

In the financial management industry, an increase in profit is typically realized when  
15 there is an increase in volume of credit contracts, a reduction in the loss from active credit contracts, or a combination of both. The major source of loss is typically due to customers defaulting in their payments. To reduce incidences of default in payments, it is important to carefully screen credit applications. Screening credit applications with stringent criteria can lead to significant reduction in losses due to defaults in payments. Such screening can help to  
20 identify when economic hardships are foreseeable from the applicant's financial status. However, stringent approval criteria may also result in a decline in the number of approvals of credit applications. Therefore, it is desirable to reduce the risk of loss without a significant impact on the growth in the volume of credit contracts. It is also desirable to increase the

volume of credit contracts by controlling the criteria used to approve credit applications, without incurring a significant increase in the risk or loss or in actual loss.

Known techniques in controlling the criteria used to approve credit applications generally are based on the use of current spending data. However, in such techniques, the  
5 criteria are used to predict future economic conditions and spending based on data at a given point in time.

What is needed, therefore, is a credit management system that is more adaptable to real-time changes in the economy and spending habits.

#### SUMMARY OF THE INVENTION

10 The present invention meets these needs in the art by dynamically managing a financial account. The financial account is created based on a set of underwriting criteria and is established with a laundry list of services and parameters under which those services are provided. Based on aggregated data accumulated from the transaction activity of several financial accounts being serviced, the services and parameters of a financial account can be  
15 modified, augmented or discontinued on a real-time or virtually real-time basis.

In addition, the present invention can operate to modify the underwriting criteria that serve as the basis for qualifying a customer for an account based on the aggregated data and/or input from various risk models. Likewise, the services and parameters of the financial account can be modified based on the underwriting criteria.

20 In one embodiment, risk models are used to further define or modify the underwriting criteria. The risk models can operate on the aggregated data or on other industry information.

The modifications to the services and parameters of the financial account include, but are not limited to, (a) modifying the fees associated with services, (b) modifying a line of credit associated with the account, (c) modifying restrictions on transactions, and/or (d)  
25 temporarily disabling the account or particular services associated with the financial account.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Other aspects, advantages and novel features of the invention will become more apparent from the following detailed description of exemplary embodiments of the invention  
30 when considered in conjunction with the accompanying drawings wherein:

Fig. 1 is a flow diagram that illustrates a traditional process used in the management of a credit account.

Fig. 2 is a system diagram illustrating an exemplary application of the present invention.

#### DETAILED DESCRIPTION

In general, the present invention can be described as a novel system and method for dynamically managing a financial account based on the use of risk modules, aggregated data, and behavior of the customer or class of customers. The exemplary embodiments provided within this description are for illustrative purposes only and a person skilled in the art should construe them broadly. Referring now to the figures, in which like numerals refer to like elements throughout the several views, exemplary embodiments of the present invention are described. Throughout the detailed description, reference will be made to the operation of the present invention in utilizing the Stored Value Systems that are currently deployed by several credit card processing companies. These systems operate to create accounts for the issuance of a card, and provide the settlement and authorization functionalities. It should be understood that the features and aspects of the present invention can be ported into a variety of systems and system/network configurations and any examples provided within this description are for illustrative purposes only.

Fig. 1 is a flow diagram that illustrates a traditional process used in the management of a financial account. Although the details of the operation of the transaction **100** may vary among various embodiments of the present invention, an exemplary embodiment includes the steps of: (a) defining the underwriting criteria; (b) collecting consumer information; (c) making a decision based on the underwriting criteria; and (d) creating the account. More specifically, the process **100** includes the step of defining the underwriting criteria **110**. In this step, the credit issuer defines a set of criteria used to determine the credit worthiness of an individual and uses risk management techniques to determine if an individual will qualify for an account. The exact criteria used in this step may differ from issuer to issuer and one skilled in the art would know many different sets of suitable criteria. At the very least, the underwriting criteria is determined at the beginning of the process and used as a benchmark of qualification for an account. Typically, the underwriting criteria remains constant throughout the process and is used only for the initial qualification.

The next step in process **100** involves the step of collecting consumer information **120** that is used to qualify the consumer. Some examples of consumer information include, but are not limited to the name, date of birth, address, telephone, social security number, verified

government identification, direct deposit account (DDA) information and number, savings account information and number, credit history, debt to credit ratio, assets, marital status, employment history etc., of the consumer.

Next, a decision is made based upon the underwriting criteria **130**. The details of this step may vary between issuers and may be considered proprietary; however, one skilled in the art would construe this step to be known in the art. If the decision based upon the underwriting criteria **130** is that the consumer qualifies for an account, the next step is creating the account **140**. This is where the account is set up and ready to be managed. After the step of creating the account **140** is completed, the issuer sends the consumer the appropriate information to use the account and routine maintenance of the account continues from there.

Fig. 2 is a flow diagram illustrating an exemplary embodiment of the present invention. The details of the operation of the flow diagram **200** may vary among various embodiments of the present invention. In general, the illustrated embodiment includes five main functions or components: the data collection component **210**, the decision engine **220**, the account creation component **230**, the account management component **240** and the transactional processing component **250**. It should be understood that the structure illustrated in this figure is for discussion purposes only and the various functions or components of the present system could be combined or split in many manners.

The data collection component **210** collects data or information relevant to: opening a credit account (account formation data **212**), determining if an applicant can qualify for an account, the type of account to be opened (account option data **214**), and other miscellaneous data. The information collected with regards to the account formation data **212** may include, but is not limited to, the applicant's name, date of birth, mailing, residential and business addresses, telephone numbers, social security number or verified government identification number, direct deposit account (DDA) information and account number, savings account information and account number, credit history, debt to credit ratio, assets, marital status, employment history etc.

Further information regarding the account formation data **212**, the account option data **214** and the account types can be found in the related application that has been incorporated into this specification by reference. After the data collection component **210** receives the necessary or the minimum amount of information, the decision engine **220** can be begin processing.

The decision engine **220** receives raw or processed data from the data collection component **210** and, among other functions, integrates it with underwriting criteria **222** to determine if a customer qualifies for an account. The underwriting criteria **222** is initially determined using a collection of integrated algorithms, methods of work, business processes,  
5 and initial risk modules **224** that enable the analysis, issuance, distribution, and monitoring of an integrated credit product. The initial risk models **224** are compiled from a variety of different sources that vary by issuer and one skilled in the art is familiar with the type of information that is associated with them. In addition to determining if a customer qualifies for an account, the decision engine system **220** also determines if a customer qualifies for any  
10 applicable account option data **214** selected in the data collection system **210**. For example, if a customer selected an overdraft option in the account option data **214**, the decision engine **220** would determine if the customer qualified for that option and, if qualified, the amount of the overdraft limit. The decision engine **220** uses the account formation data **212** to qualify the customer and perform a risk management processes. The customer is subjected to  
15 underwriting criteria **222** to determine qualification and some additional data or documents may be required for the process.

Once a customer is qualified, the account creation component **230** proceeds to open an account. The account creation component **230** may perform different functions depending upon the account option data **214**. Preferably, the account creation component **230** operates  
20 to create an account for the customer in a manner that is in compliance with all applicable local, state and federal laws. During the account creation, the account creation component **230** may utilize various procedures to support issuer risk mitigation requirements. In an exemplary embodiment, the risk mitigation procedures are only instituted for an account with the overdraft component **234** and not the other account types. Those skilled in the art will be  
25 aware of the various mitigation procedures and understand that the procedures can vary by each issuer and are commonly known in the art.

The procedures performed by the account creation component **230** may vary depending on the type of account being created. In the examples provided in the incorporated reference, the three account types include the instant issue card, the basic card and the basic  
30 card with overdraft protection. Other functions that may be performed by the account creation component **230** include the activation of the account the issuance of cards. The details of these functions are more specifically described in the incorporated reference.

The account management component **240** manages the customer account by utilizing controllers to enable and disable certain functions and privileges of the account based on various factors. Some of the factors can include account risks and customer behaviors. In one embodiment, the account management component **240** can include the functions of fraud management model **242**, fee management model **244** and account behavior model **246**. The fraud management model **242** can utilize the operation of the account behavior model **246** to determine if any fraudulent activities are associated with the account. If any fraudulent activities are detected, the account management component **240** can be notified by the fraud management model **242** to suspend the account. The fee management model **244** determines and assesses any applicable fees to be charged against the account. For example, if the account is overdue, a late fee would be assessed to the account. In the various embodiments, additional fees can be assessed against the accounts. For instance, a one time fee may be assessed for the creation of the account or for the creation of certain accounts, such as accounts having an overdraft component **234**. In addition, the account may include a fixed number of transactions or a fixed number of transactions per fixed period (i.e. per month). Once the fixed number of transactions is exceeded, additional transactions can be assessed a transaction fee. In another embodiment, a monthly fee may be assessed on the account.

The account behavior model **246** examines account activity and looks for patterns in the account activity to determine possible actions to be taken (i.e. intervention to stop fraud ). For example, if an account appeared to have sporadic spending or if the stored value became zero, the account could be turned off temporarily to ascertain if the account is being defrauded. The transactional processing component **250** processes and monitors the day to day transactions between the account and the financial transaction network **255**. The transactional processing component **250** is then compiled by the data aggregation module **252**.

The data aggregation module **252** may work on data related to the entire population of account holders, groups of populations based on factors such as age, occupation, areas of domicile etc. or even individuals. The data aggregation module **252** provides processed outputs to the risk models **224** and the account behavior **246** model.

A key aspect of the present invention is found in the operation of the account management component **240**. The account management component **240** of the present invention enables the dynamic management and alteration of the financial account based on real-time and current information. Two controlling factors are applied to the account

management component **240**. These controlling factors include the output of risk models **242** that have been run on the initial underwriting criteria collected by the data collection component **210**, as well as the output of the data aggregation module **252**.

5 The data aggregation module **252** refines and updates, preferably on a real-time basis, the various current trends of the accounts being managed. This information is then fed into the risk models **224** which determine new underwriting criteria **222**, and the account behavior **246** model. The data aggregation module **252** can feed information into the risk models **224** and the account behavior **246** model at periodic intervals, continuously, autonomously, on request, or on other bases. The account behavior model **246** can operate to alter the  
10 parameters of the operation of the credit account. The account behavior model **246** can base these alterations on the input from the aggregation module **252** and/or the risk models **224**. Thus, in operation, the data aggregation module **252** may identify trends for a particular subset of the population. This information in turn can be used by the risk models **224** to identify certain risks associated with the particular subset or related subsets of the population.  
15 This information, as well as the information directly provided from the data aggregation module **252** can serve as the basis for altering the parameters of the credit account. As a particular example, suppose that the data aggregation module **252** identifies an increase in transactions by customers identified as working in the airline sector and the risk models **224** indicate a decline in job stability in the transportation industry. The account behavior model  
20 **246** may utilize this information to decrease the lines of credit provided to customers working in the airline sector, increase fees associated with their accounts, provide a higher level of scrutiny on approvals of purchases, lock the account from further purchases, or the like. From a fraud perspective, the account behavior model can receive information from the data aggregation module **252** that may be an indication of fraudulent behavior. The account  
25 behavior module **246** can then take actions to limit or alleviate the risk of fraud.

Similarly, the risk models **224** can receive input from the data aggregation module **252** and/or the account behavior model **246**. The information fed to the risk models **224** is used as the basis for generating new underwriting criteria for qualifying new individuals for accounts. The new underwriting criterion provides more accurate real-time criteria that are not  
30 otherwise available when using underwriting criteria that has only been created at the initial stages of qualification.

Thus, the present invention operates to set forth the criteria for a customer to qualify for a financial account and to further augment that criteria based on the activities of the customer, the activities of other customers and the output of risk models. This functionality advantageously allows the application of filters in the qualification process based on real-time, real-world information. In addition, the active accounts can be closely managed and controlled based on the activities of the customer or a class of customers, as well as the output of risk models. Thus, the risk of loss associated with the active accounts can be controlled based on real-time real-world information without further restricting the number of financial accounts that are awarded to customers. One skilled in the art will appreciate that the application of the present invention can take many forms and functions and the examples provided herein are only used to illustrate a few of these possibilities. The scope of the present invention is not limited by these examples.

In the description and claims of the present application, each of the verbs, “comprise” “include” and “have”, and conjugates thereof, are used to indicate that the object or objects of the verb are not necessarily a complete listing of members, components, elements or parts of the subject or subjects of the verb.

Although this disclosure describes the invention in terms of exemplary embodiments, the invention is not limited to those embodiments. Rather, a person skilled in the art will construe the appended claims broadly, to include other variants and embodiments of the invention, which those skilled in the art may make or use without departing from the scope and range of equivalents of the invention.